

Remarks

Status of application

Claims 1-41 were examined and stand rejected in view of prior art, as well as stand rejected for technical issues. The claims have been amended to further clarify Applicant's invention. Reexamination and reconsideration are respectfully requested.

The invention

Applicant's Boolean Network rule engine provides a system and methodology to optimize the evaluation of large groups of tightly coupled rules based on input data so as to arrive at a conclusion or result based on the input data. Rather than harvesting and evaluating all inputs as with prior art systems, Applicant's system and methodology provides for improved performance by evaluating a smaller set of inputs, namely those which are relevant to the outcome of the rule. Applicant's rule engine provides for activating and passivating links among inputs and logic gates so as to avoid harvesting of inputs and evaluation of conditions which are not relevant to outcome. For instance, Applicant's invention may determine that a second input to an OR gate is not relevant to rule evaluation when the first input to the OR gate is TRUE. When Applicant's Boolean Network rule engine determines that an input is irrelevant, a passivation message is propagated through back to the transducer layer such that all the logic leading up to that input (i.e., the one determined to be irrelevant) is passivated. In this manner, the process of gathering and evaluating data at one or more transducers may often be avoided, which leads to improved system performance.

Applicant's Boolean Network rule engine is currently implemented as a component of a business process engine application. Its components include a rules interface for receiving a set of rules having conditions, a network builder for building a "Boolean Network" representation of the set of rules which includes transducers linked by logic gates in a computing system, with each transducer generating a Boolean value based on evaluating input data against a rule, and a runtime evaluation engine for evaluating rules based on detecting changed items of input data, activating and passivating links among transducers and logic gates based on the detected changes so as to utilize transducers and logic gates of the Boolean Network representation relevant to

rule outcome, and returning results of rule evaluation based on such active transducers and logic gates.

General

A. Information Disclosure Statement

Applicant has concurrently filed an Information Disclosure Statement (IDS) in conjunction with this amendment.

B. Amendment to Specification

The Examiner objected to the Abstract as exceeding the limit of 150 words. Applicant has amended the Abstract so that it does not exceed 150 words, thereby overcoming this objection.

C. Section 101 rejection

Claims 1-41 stand rejected under 35 U.S.C. 101 on the basis of non-statutory subject matter. Here, the Examiner states that Applicant's claimed invention sets forth a system but fails to disclose any useful, concrete and tangible result or output produced by the claim limitations. Applicant has amended independent claims 1, 15 and 20 to include claim limitations of returning results of rule evaluation, thereby overcoming the Section 101 objection. Accordingly, it is respectfully submitted that in view of the above-mentioned amendments, the rejection of Applicant's claims 1-41 under Section 101 on the basis of non-statutory subject matter is overcome.

D. Section 112, second paragraph rejection

The Examiner has rejected claims 1-41 under 35 U.S.C. Section 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant's independent claims 1, 15 and 20 have been amended to clarify that Applicant's invention provides for building a representation of a set of rules in a computing system based a set of rules received from a user, with the representation of the set of rules in the system including transducers and logic gates. In response to input data received during runtime operation,

these transducers and logic gates are activated and/or passivated so as to process inputs relevant to rule outcome against the set of rules and return the results of rule evaluation.

Accordingly, it is respectfully submitted that in view of the above-mentioned amendments, the rejection of Applicant's claims 1-41 under Section 112 as being indefinite is overcome.

Prior art rejections

The Examiner has indicated that claims 10, 12-19, 29 and 31-39 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In order to expedite prosecution of the present application, Applicant has amended the claims to incorporate the features which the Examiner has already indicated to be allowable over the art. More particularly, Applicant has amended independent claim 1 by adding the limitations of claim 12 and intervening claim 11 so as to include in amended claim 1 those features which the Examiner has indicated are allowable over the art. Applicant has canceled dependent claims 11 and 12. Applicant has also amended claim 15 (which was formerly dependent upon claim 1) to incorporate all the limitations of claim 1. In addition, Applicant has amended claim 19 to refer to amended claim 15.

Applicant has also amended independent claim 20 to incorporate the limitations of dependent claim 31 and intervening claim 30 so as to incorporate the features the Examiner has indicated to be allowable into this independent claim. Claims 30 and 31 have been canceled. In addition, claim 41 has been amended for further clarity.

Applicant's amended claims are believed to distinguish over the art because, for example, the prior art of record does not include the claim limitations of activation of transducers and logic gates based on the evaluation of data input and link weights as provided in Applicant's amended claims. For instance, Applicant's amended claim 1 includes (among other features) the claim limitations of assigning weights to links between transducers and logic gates for establishing an order in which transducers and logic gates are evaluated and activating transducers and logic gates based on results of evaluation of items of input data and said weights. Through assigning weights to links and activating and passivating transducers and logic gates, Applicant's invention can

avoid the need to collect and process inputs which are not relevant to rule outcome. These features are not disclosed, taught, or suggested by the prior art references, either alone or in combination. For example, the Zahn (US Pat. No. 6,535,864) and Gerstenmaier et al. (US Pat. No. 4,475,159) references cited by the Examiner provide for detection and processing of event changes whether or not those event changes could influence the outcome of rule evaluation.

Based on the above-described amendments, Applicant believes that independent claims 1, 15 and 20, and all dependent claims thereof, are now in condition for allowance.

Any dependent claims not explicitly discussed are believed to be allowable by virtue of dependency from Applicant's independent claims, as discussed in detail above.


Conclusion

In view of the foregoing remarks and the amendment to the claims, it is believed that all claims are now in condition for allowance. Hence, it is respectfully requested that the application be passed to issue at an early date.

If for any reason the Examiner feels that a telephone conference would in any way expedite prosecution of the subject application, the Examiner is invited to telephone the undersigned at 408 884 1507.

Respectfully submitted,

Date: December 4, 2006


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